Cassia obtusifolia, L. = *C. Tora*, L.
Spiræa opulifolia, L. = *Neillia opulifolia*, B. & H.
Dryas integrifolia, Vahl. = *D. octopetala*, L., var. *integrifolia*, Cham. & Schlect.
Potentilla paradoxa, Nutt. = *P. supina*, L.
Dalibarda repens, L. = *Rubus Dalibarda*, L.
Rosa lucida, Ehrhart (Gr. Man. p. 158) should be *R. lucida*, Pursh, which is now *R. parviflora*, Ehrh.
Rosa nitida, Willd. is a distinct species.
Cratægus tomentosa, L., var. *mollis*, Gr. = *C. subvillosa*, Schrad.
Amelanchier Canadensis, T. & G., var. *alnifolia*, T. & G. = *A alnifolia*, Nutt.
Ribes hirtellum, Mx. = *R. oxyacanthoides*, L.
Philadelphus inodorus, L., var. *grandiflorus*, Gr. = *P. grandiflorus*, Willd.
Sullivantia Ohionis, T. & G. = *S. Ohioensis*, T. & G.
Fothergilla alnifolia, L. f. = *F. Gardeni*, L.
Epilobium angustifolium, L. = *E. spicatum*, Lam.
Epilobium alpinum, L., var. *majus*, Vahl. = *E. origanifolium*, Lam.
Œnothera biennis, L., var. *Oakesiana*, Gr. = *Œ. Oakesiana*, Robbins.
Œnothera riparia, Nutt. = *Œ fruticosa*, L., var. *linearis*, Watson.
Œnothera linearis, Mx. = *Œ. fruticosa*, L., var. *linearis*, Watson (in part.)
Œnothera chrysantha, Mx. = *Œ. pumila*, L.
Ammannia Nuttallii, Gr. = *Didiplis linearis*, Raf.
Conioselinum Canadense, T. & G. = *Selinum Canadense*, Mx.
Zizia integerrima, DC. = *Pimpinella integerrima*, Benth & Hook.
Sium lineare, Mx. = *S. cicutæfolium*, Gmelin.
Sium angustifolium, L. = *Berula angustifolia*, Koch.

Starch in Chlorophyll.—It is very easy to prove the existence of starch in chlorophyll. Let the green color be destroyed by immersion in alcohol, or by any other bleaching process; then soak the specimen a few moments in Potassium Hydrate to destroy the protoplasm. Testing with iodine the chlorophyll grains immediately assume the characteristic blue tint of starch, especially in the guardian cells of the stomata. Such a neat experiment, having so much bearing on the question of assimilation, should be performed by every botanist interested in vegetable physiology.—J. M. C.

The Botanical Text-book, 6th edition, Part I, Structural Botany, by Asa Gray, LL. D., Ivison, Blakeman, Taylor & Co., New York

and Chicago.—The publication of a new work by Prof. Asa Gray, and the volume before us is in effect new, is always a matter of congratulation to botanists. The present book while especially valuable to teachers of our science, should also be possessed by every student who wishes to keep informed as to the latest discoveries, hypotheses and theories. From the first line to the concluding paragraph one feels that he is guided by a master. We find here that grace of style and conciseness of expression which mark all our author's other writings. He brings to the consideration of the subjects herein embraced the experience of a life-time. What other man could do the work so well? This is the sixth edition of the well-known Botanical Text-book, of which the first was published in 1842, the fifth in 1857. We might almost say that every edition marks an epoch in the progress of science. We need not emphasize the strides that have been made since 1857, a period just preceding the publication of the Origin of Species. And in this connection, as one naturally turns to the portions of a work to which he knows the author has given particular attention, we would advise our readers to peruse the exhaustive chapters on Classification, and on Adaptations for Intercrossing.

The author informs us in his preface that this edition has been entirely re-written. Every line shows careful thought and study. The book has outgrown its original scope, and instead of one volume we are now to have four. The first treats of Morphology, Taxonomy, and Phytography, and is enriched, moreover, by a copious glossary of botanical terms. It is profusely illustrated, and while the old figures appear we have in addition many new ones. These are all that they should be, graceful, characteristic and demonstrative. Prof. G. L. Goodale is engaged in the preparation of the second volume, which is to consider Vegetable Physiology and Anatomy. It will indeed be a handbook of these too much neglected branches, in which Dr. Goodale has achieved great distinction as experimentalist and teacher. The third volume, an introduction to Cryptogamous Botany will be by Prof. Farlow, and the fourth and concluding one Dr. Gray writes, "The present author may rather hope than expect himself to draw up." This will be on the Morphology and Economic Use of the Natural Orders of Phaenogamous Plants.

Here then we have the beginning of a work which when completed will be an absolute necessity to every botanist. Each part is entrusted to a specialist, and each of the co-workers has the advice and assistance of the others. Throughout the whole we may expect to note the guiding spirit, the acute observation and painstaking

thought of the original author. All must join in the fond hope that he may long remain with us in health and strength to complete what he has so ably begun. It is a work that must remain a credit, not only to Botany, but to American science forever.—W. W. Bailey.

Distinction between Monocotyledons and Dicotyledons.—Flahault has shown a beautiful distinction between Monocotyledons and Dicotyledons that any botanist with a moderately good glass can demonstrate for himself. A thin longitudinal section through the young root tip shows that in monocotyledons the root cap seems to be an independent thing, fitting on like a calyptra, while in dicotyledons there is no such distinction, but a perfect blending of tissues. In the former case the root-cap is renewed from its own inner row of meristem, while in the latter it is renewed directly from the *punctum vegetationis*.—J. M. C.

Notice.—I would give notice that my address after September 1st will be changed from Hanover to Wabash College, Crawfordsville, Ind. Hence any communications to me of any kind in regard to the Gazette should be addressed to that place after the date mentioned above.—John M. Coulter.

An Interesting Demonstration.—Many plants contain raphides, crystals of oxalate of lime, etc., but cystoliths are of rarer occurrence, although abundant in certain plants, notably in those belonging to the Urticaceæ. A very interesting experiment and one that almost any one possessing a microscope of even ordinary power, say 200 or 300 diameters, may perform for himself is as follows: Take a leaf of *Ficus Indica*, *elastica* or *Morus*, *Morus rubra* or almost any of the Artocarpeæ and make a section of moderate thinness. If too thin the cystoliths will be broken and pulled out by the razor. Under the glass will be seen a beautiful arrangement. Certain cells of the epidermis or of the surrounding tissue are enlarged and specialized and from their top the mass usually hangs upon a short stalk. In *Ficus elastica* the cystoliths consist of an amorphous mass of cellulose studded with crystalline points of carbonate of lime, the whole being in somewhat the form of a very thick bunch of grapes. If now we place a drop or two of acetic acid at the edge of the cover-glass and allow it to creep under while we keep our eye upon the object the result will easily prove the composition of the crystals. Quite a furious effervescence takes place and soon nothing is left but the amorphous cellulose. Upon jarring the table slightly this will be